Precalculus Test Section 6.1 Name _____

SHOW ALL WORK

I. Multiple Choice

_____ 1. Given $\triangle QED$, $\sin \angle Q$ =

A) $\frac{qe}{\sin \angle E}$ B) $\frac{q}{e \sin \angle E}$ C) $\frac{q \sin \angle E}{e}$

D) $\frac{e \sin \angle E}{q}$ e) None of these

_____ 2. Given $\triangle ABC$ with $m\angle A = 90^\circ$, $m\angle B = 34^\circ$, and side c = 14.7 yards. Determine the length of side b.

A) 17.7 yards B) 9.92 yards C) 16.6 yards
D) 8.81 yards E) 22.14 yards

_____ 3. Given $\triangle ABC$ with side a = 91.6 inches, side c = 24.19 inches, and $m\angle B = 37^\circ$, Determine the area of the triangle.

A) 1769.6 square inches B) 666.8 square inches
C) 1107.9 square inches D) 1333.5 square inches
E) None of these

_____ 4. Given $\triangle ABC$ with $m\angle C = 72^\circ$, $m\angle A = 15^\circ$, and side b = 342.6 yards. Determine the length of side a.

A) 1258.92 yd B) 88.79 yd C) 6323 yd
D) 326.28 yd E) None of these

II. Free Response

5. Given $\triangle ABC$ with $m\angle A = 47^\circ$, side c = 123 feet, and $m\angle B = 63^\circ$, Determine the area of the triangle

6. Given $\triangle ABC$ with $m\angle A = 34^\circ$, $m\angle B = 77^\circ$, and side a = 39 yards. Determine the length of side b.

7. Write out the Law of Sines for $\triangle AMY$.

8. Determine the area of $\triangle NED$, given that n = 8 ft, e = 6.8 ft, and $m\angle D = 55^\circ$.

9. Given $\triangle ABC$ with $m\angle A = 62^\circ$, $m\angle B = 53^\circ$, and side c = 56 miles. Determine $m\angle C$, the length of side b, and the length of side a.

10. The cross country race starts at a point H, and proceeds in the direction S 50° W to point A. Then the runners proceed in the direction S 36° E to point D. Then they go due North and end up back at point H. If the distance from D to H is 1.1 miles, what is the total distance of the course?

Extra Credit:

11. Given $\triangle ABC$ with $m\angle A = 34^\circ$, $m\angle B = 77^\circ$, and side a = 23 yards and side c =35 yards. Determine the length of side b. Explain your answer.